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Day of Obs. 1875.	Satellite.	Phenomenon.	Telescope.	Power.	Mean Solar Time of Observation. h m s	Mean Solar Time from N.A. h m s	Observer.
May 29	II	Tr. eg. first cont.	,,	,,	11 45 53	11 49	C
,,	II	,, bisection	,,	,,	11 47 22		
,,	II	,, last cont.	,,	,,	11 49 7		
June 24	I (*g*)	Tr. eg. last cont.	,,	140	11 29 46	11 14	L
July 3	III	,, last cont.	,,	,,	11 9 12	11 10	T

Notes.

(*a*) The limb of *Jupiter* was very tremulous.

(*b*), (*d*), (*e*) The limbs of the planet were badly defined.

(*c*) The first diminution of brightness was observed $2^{m}\ 15^{s}$ before the time here recorded.

(*f*) The observation was not satisfactory.

(*g*) The image of *Jupiter* was very bad. The recorded time is evidently erroneous.

The initials L, C, AD, M, T, G, P, and RP, are those of Mr. Lynn, Mr. Criswick, Mr. Downing, Mr. Maunder, Mr. Thackeray, Mr. Graham, Mr. Pulley, and Mr. Pett respectively.

Royal Observatory, Greenwich,
1877, *January* 13.

Stars to be compared in R. A. with Mars 1877, *for Determination of the Parallax of Mars.*

(*Communicated by the Astronomer Royal.*)

The stars in the accompanying list have been selected from those given on the chart in the *Monthly Notices* for 1875, November, as being suitable for equatoreal observations of the differences of their R. A. and that of *Mars*, east and west of the meridian. They have been arranged in pairs, one star preceding and the other following *Mars;* and as a fresh setting of the Equatoreal in N.P.D. will usually be required for each object, an interval of at least three minutes of time is allowed between the transit of *Mars* and that of either star. In some cases, however, a pair of stars can be found passing through the same field as *Mars*, and here a much smaller interval will be sufficient, with the advantage that a larger number of comparisons can be made, the sets being repeated in more rapid succession. Such pairs of stars are denoted by an asterisk. In order to eliminate as far as possible the effect of error of adjustment of the Equatoreal, stars have been selected at about equal distances north and south of *Mars*, and in some few instances where this was not practicable,

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two stars on one side have been given with a view to securing a due balance, it being intended that these two stars should be observed alternately in combination with *Mars* and the other star. Preference has been given to the brighter stars, but there is such a paucity of stars in this region that it has sometimes been necessary to go as low as the ninth magnitude.

The plan of observation requires a firmly-mounted Equatoreal, which can be securely clamped in Right Ascension, and provided with a transit eyepiece having a system of parallel meridional wires at convenient intervals. A number of sets of transits of *Mars* and a pair of stars should be taken in as rapid succession as possible in the evening, when *Mars* is east of the meridian and as far from it as practicable; and a corresponding number of *Mars* and the same pair of stars in the early morning, when *Mars* is far to the west, the Equatoreal being firmly clamped for each set. Both limbs of *Mars* are in all cases to be observed, over alternate wires, or otherwise, as may be found convenient, care being taken that the limb (whether first or second) observed over any particular wires in one set be observed over the other wires in the next set. The same pair of stars must be observed in the morning and evening (as has been mentioned), and when a change occurs from one day to the next, both the old and the new pair should be observed alternately on one morning or evening at least. If different observers take part in the work, care should be taken that each observer is charged as often with morning as with evening observations.

The value of the observations made at any particular station will depend largely on the interval between the evening and morning sets of comparisons; and the choice of stations is determined mainly by consideration of the available time-interval during which *Mars* is far enough above the horizon and the Sun far enough below to allow of satisfactory observations being made. Taking these "horizon allowances" as $1^{h}\ 20^{m}$ for lat. 50° N., $1^{h}\ 0^{m}$ for lat. 15° N., and $1^{h}\ 10^{m}$ for lat. 35° S., the "available time-interval" has been computed for these three latitudes; and the following table has been formed, showing, at intervals of seven days, the square of the quantity $\frac{1}{\text{dist. of } Mars}$ × cos. of station's latitude × available time-interval, which may be considered as a roughly approximate value of the square of the parallax factor, and which gives the combining weight of these observations in the determination of the Sun's Equatoreal Horizontal Parallax.

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(*Parallax Factor*)^2

			Latitude 50° N.	15° N.	35° S.
1877	July	22	23	155	180
		29	34	202	216
	August	5	50	259	269
		12	72	329	325
		19	97	405	383
		26	126	487	444
	Sept.	2	156	563	492
		9	152	586	480
		16	141	496	413
		23	125	410	330
		30	104	330	256
	Oct.	7	86	263	194
		14	71	208	144
		21	57	163	106
		28	50	129	78

Pairs of Stars to be compared in R.A. with Mars.

(The Nos. are those of Weisse's Bessel, *Cat. Stell. in Zonis Regiomontanis.* The mean places of the Stars for 1877 are given in the *Monthly Notices*, for 1875, November.)

1877.		
July 25	322, 565	427*, 508*
26	„	„
27	427, 586	
28	„	
29	„	
30	427, 619, 629	
31	„	
Aug. 1	„	
2	„	
3	„	
4	„	
5	„	
6	„	
7	„	
8	„	
9	„	
10	„	

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1877.		
Aug. 11	427, 619	
12	,,	
13	,,	
14	,,	
15	427, 583	
16	,,	
17	,,	
18	377, 583	
19	,,	
20	,,	
21	377, 497	
22	,,	
23	315, 497	
24	315, P. XXIII. 109	
25	,,	
26	265, 497	
27	265, 402	309*, ✳ (R.A. 19^{h} 55^{m} N.P.D. 101°22′)*
28	,,	286*, 385*
29	ψ^3 Aquarii, 402, 403	
30	,,	
31	ψ^2 Aquarii, 373	185*, 309*
Sept. 1	Lal. 45504, 309	,,
2	,,	,,
3	57, 265	Lal. 45504*, 309*
4	,,	,,
5	,,	,,
6	49, 228, 270	57*, Lal. 45504*
7	1276, 185	,,
8	,,	,,
9	1261, Lal. 45504	1261*, 57*
10	,,	,,
11	1204, 57	,,
12	,,	,,
13	,,	,,
14	1129, 12, 14	1204*, 1261*
15	,,	,,
16	,,	
17	1079, 1261	1129*, 1204
18	,,	

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1877.				
Sept. 19		966, 1204		
20			966*, 1129*	
21			"	
22		74 Aquarii, 1165	"	
23		"	"	
24		"	"	
25		"	"	
26		"	"	
27	918, 1129	935, 1156	70 Aquarii, 1079	966*, 1129*
28		70 Aquarii, 1079		
29		"		
30		"		
Oct. 1		"		
2		"		
3		"	74 Aquarii (conjunction)	
4		"	"	
5		"	"	
6		"		
7		"		
8		"		
9		"		
10		70 Aquarii, 1047, 1079		
11		"	926*, 1007*	
12		"	"	
13		"		
14		70 Aquarii, 1065		
15		910, 1047	70 Aquarii, 1122	
16		70 Aquarii, 1122	946*, 70 Aquarii*, 1020*	
17		70 Aquarii, 1120	977*, 946*, 1020*, 1017*	
18		"	994*, 933*, 1017*	

Royal Observatory, Greenwich,
1877, *January* 13.

On O. M. Mitchel's Observations at Cincinnati.

By Cleveland Abbe, Esq.

In a note to his recently-published "Reference Catalogue" Mr. Knobel calls attention to the fact that copies of Mitchel's *Sidereal Messenger* are very rare in England, and to the Supplementary note in *Nature* (November 9, page 49). I would add,